WHAT IS CLAIMED IS:

1. A semiconductor light emitting device, comprising:

a silicon substrate; and

a plurality of column-shaped multilayered structures formed on the silicon substrate in such a manner that the column-shaped multilayered structures are insulated from one another, the column-shaped multilayered structures being made of a nitride semiconductor material, and each column-shaped multilayered structure including a light emitting layer,

wherein the column-shaped multilayered structures are connected to one another by an electrode.

2. A semiconductor light emitting device according to claim 1, wherein an insulating film is provided on the silicon substrate for insulating the column-shaped multilayered structures from one another.

3. A semiconductor light emitting device according to claim 1, wherein the column-shaped multilayered structures are arranged with an interval of 5-20 μm therebetween.

4. A semiconductor light emitting device according to claim 1, wherein the column-shaped multilayered structures are arranged in a matrix along a <11-2> crystal direction and a direction orthogonal to the <11-2> crystal direction over the silicon substrate.

5. A semiconductor light emitting device according to claim 1, wherein a cross-section of each column-shaped multilayered structure has the shape of a square or a rectangle.

6. A semiconductor light emitting device according to claim 1, wherein a cross-section of each column-shaped multilayered structure has the shape of a triangle.

7. A semiconductor light emitting device according to claim 1, wherein the length of each column-shaped multilayered structure along a direction orthogonal to the <11-2> crystal direction of the silicon substrate is 100 μm or smaller.

8. A semiconductor light emitting device according to claim 1, wherein the electrode which connects the column-shaped multilayered structures to one another is

a transparent electrode which allows transmission of light emitted by the column-shaped multilayered structures through the transparent electrode.

9. A semiconductor light emitting device according to claim 1, wherein the electrode which connects the column-shaped multilayered structures to one another is provided with a bonding electrode for supplying an external electric current to the electrode.

10. A semiconductor light emitting device according to claim 1, wherein the column-shaped multilayered structures emit light having the same wavelength.

11. A semiconductor light emitting device according to claim 1, wherein light emitted by each of the column-shaped multilayered structures has any of a plurality of predetermined different wavelengths.

12. A semiconductor light emitting device according to claim 1, wherein adjacent column-shaped multilayered structures are electrically connected by a conductor.

13. A method for producing a semiconductor light emitting device, comprising steps of:

providing an insulating film having a plurality of opening portions on a silicon substrate;

forming column-shaped multilayered structures of a nitride semiconductor material in the opening portions of the insulating film, each column-shaped multilayered structure including a light emitting layer; and

forming an electrode for electrically connecting the column-shaped multilayered structures to one another.